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A PRIMER OF CONSERVATION.

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(Includes Excerpts from Addresses Given at the White House Conference of Governors.)

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A PRIMER OF CONSERVATION.

The wise use of all our natural resources, which are our national resources as well, is the great material question of to-day.

Disregarding for the moment the question of moral purpose, it is safe to say that the prosperity of our people depends directly on the energy and intelligence with which our natural resources are used. It is equally clear that these resources are the final basis of national power and perpetuity. Finally, it is ominously evident that these resources are in the course of rapid exhaustion.

[From the President's opening address at the Conference on the Conservation of Natural Resources, White House, May 13, 1908.]

INTRODUCTION.

The savage knows and confesses his dependence upon the forces of nature. His whole life is circumscribed by the resources of forest, field, and stream. Indeed, he feels himself a part of nature and scarcely separates his fate from that of his surroundings. The game of the prairie, the forest, and the river, the berries and herbs in their season, and the living waters supply him with food and drink. With the changing seasons he moves from place to place, pursuing plenty. He winters in rude huts filled with smoke from fires of fallen wood, hardly less at the mercy of the cold than are the hibernating animals. In the spring he wakes with nature, and his summers are prosperous and happy only as the wild crops of field and forest are plentiful. He rises and lies down with the sun. He survives only as he observes nature and fits himself to her ways.

But as savagery gives place to civilization, man frees himself more and more from those bonds which bound him so closely to nature. Slowly and painfully at first, and then far more rapidly and easily, he learns to control his material surroundings. He breaks the prairie with the plow, makes the beasts of the field his servants, strikes the pick into the mountain and the ax into the veteran of the forest. He now no longer waits upon the seasons. He builds himself a house against the cold and warms himself to the point of comfort in the midst of the winter blast. Instead of passively accepting the wild fruits as they ripen he compels the soil to yield a harvest a millionfold more abundant, and this harvest he stores up against

days of want. Instead of migrating with the birds he fixes his home where he will and pursues his work and his pleasure in his own time.

Discovery and invention place new implements in his hands. With his intelligence quickened and his body trained by new experience and new occupations he continues to increase his mastery over time, temperature, and place. New material riches become available. He is able to satisfy his wants more readily and more certainly than ever before. The standard of his living is raised. He now possesses and enjoys, besides all that his fathers required, a host of things of which they knew nothing. Wants multiply with prosperity, till his life becomes highly complex. He is lord of nature, because he has learned how to appropriate her resources.

But if the resources of nature should fail, where would be his mastery then?

This is the point which we commonly overlook. Man has laid nature under tribute, and has become powerful because nature was rich. Impoverish nature and her tribute stops. Ingenuity, capacity, labor, are incapable of extracting wealth from the gutted mine, from the fire-scorched brush land, from the sun-baked stream bed, from the impoverished soil. Civilization is achieved by the use of the resources of nature; it can endure no longer than the resources upon which it depends.

Living as we do to-day in the midst of conveniences which give us apparent independence of nature, it is almost inevitable that we should lose sight of this truth. It is difficult for us to realize that we, standing at the height of western civilization, are in fact vastly more dependent upon tributary nature than is the savage of the South Seas. Suppose the coal supply should give out in the middle of winter? Suppose a huge conflagration should sweep our forests from the hillsides? Suppose sudden floods should lay waste our fertile farm lands, scoring them with gullies or heaping them with sand? Would not any single one of these calamities bring upon us incalculable losses and suffering?

And yet these suppositions are not imaginary. We need to look only a very little way ahead, as things are going now, in order to see them realized, in effect. True, the failure of our resources will not come suddenly, and such of our resources as can be renewed need never fail if we use them wisely. But the exhaustible resources, chief among which are the mines, are coming to an end as certainly as if the end were to-day, while those resources whose exhaustion is due not to necessity but to folly have no future unless we insure it by our own prevision.

It is clear, therefore, that the question how we shall make the best use of our natural resources, renewable and not renewable, is a press-

ing question of the hour. Where renewal is impossible there is need of the strictest economy, and where renewal can be secured by prudence and foresight, the very existence of the nation demands that prudence and foresight be exercised.

This is the significance of the Conference of Governors on the Conservation of Natural Resources held at the White House, May 13–15, 1908, which took up for the first time the problem of conservation in all its details.

A CENTURY AND A QUARTER OF USE.

In his Conference address the President traced as follows the revolutionary changes which have taken place in our industrial life during the century and a quarter since we became a nation:

"From the first beginnings of civilization, on the banks of the Nile and the Euphrates, the industrial progress of the world has gone on slowly, with occasional setbacks, but on the whole steadily, through tens of centuries to the present day. But of late the rapidity of the process has increased at such a rate that more space has been actually covered during the century and a quarter occupied by our national life than during the preceding six thousand years that take us back to the earliest monuments of Egypt, to the earliest cities of the Babylonian plain.

"When the founders of this Nation met at Independence Hall, in Philadelphia, the conditions of commerce had not fundamentally changed from what they were when the Phoenician keels first furrowed the waters of the Mediterranean. The differences were those of degree, not of kind, and they were not in all cases, even those of degree. Mining was carried on fundamentally as it had been carried on by the Pharaohs in the countries adjacent to the Red Sea.

"The wares of the merchants of Boston, of Charleston, like the wares of the merchants of Nineveh and Sidon, if they went by water, were carried by boats propelled by sails or oars; if they went by land were carried in wagons drawn by beasts of draft or in packs on the backs of beasts of burden. The ships that crossed the high seas were better than the ships that had once crossed the Ægean, but they were of the same type, after all—they were wooden ships propelled by sails; and on land the roads were not as good as the roads of the Roman Empire, while the service of the posts was probably inferior.

"In Washington's time anthracite coal was known only as a useless black stone; and the great fields of bituminous coal were undiscovered. As steam was unknown, the use of coal for power production was undreamed of. Water was practically the only source of power, save the labor of men and animals; and this power was used only in the most primitive fashion. But a few small iron depositories had

been found in this country, and the use of iron by our countrymen was very small. Wood was practically the only fuel, and what lumber was sawed was consumed locally, while the forests were regarded chiefly as obstructions to settlement and civilization.

"Such was the degree of progress to which civilized mankind had attained when this Nation began its career. It is almost impossible for us in this day to realize how little our Revolutionary ancestors knew of the great store of natural resources whose discovery and use have been such vital factors in the growth and greatness of this Nation, and how little they required from this store in order to satisfy their needs.

"Since then our knowledge and use of the resources of the present territory of the United States have increased a hundredfold. Indeed the growth of this Nation by leaps and bounds makes one of the most striking and important chapters in the history of the world. Its growth has been due to the rapid development, and alas! that it should be said, to the rapid destruction of our natural resources. Nature has supplied to us in the United States, and still supplies to us, more kinds of resources in a more lavish degree than has ever been the case at any other time or with any other people. Our position in the world has been attained by the extent and thoroughness of the control we have achieved over nature; but we are more, and not less, dependent upon what she furnishes than at any previous time of history since the days of primitive man."

A FEW STATISTICS.

TIMBER.

We are now cutting timber from the forests of the United States at the rate of 500 feet B. M. a year for every man, woman, and child. In Europe they use only 60 board feet. At this rate, in less than thirty years all our remaining virgin timber will be cut. Meantime, the forests which have been cut over are generally in a bad way for want of care; they will produce only inferior second growth. We are clearly over the verge of a timber famine.

This is not due to necessity, for the forests are one of the renewable resources. Rightly used, they go on producing crop after crop indefinitely. The countries of Europe know this, and Japan knows it; and their forests are becoming with time not less, but more, productive. We probably still possess sufficient forest land to grow wood enough at home to supply our own needs. If we are not blind, or willfully wasteful, we may yet preserve our forest independence and, with it, the fourth of our great industries.

Present wastes in lumber production are enormous. Take the case of yellow pine, which now heads the list in the volume of annual cut.

In 1907 it is estimated that only one-half of all the yellow pine cut during the season was used, and that the other half, amounting to 8,000,000 cords, was wasted. Such waste is typical. Mr. R. A. Long, in his address on "Forest Conservation" at the Conference, pointed out that 20 per cent of the yellow pine was simply left in the woods—a waste which represents the timber growing on 300,000 acres.

The rest of the waste takes place at the mill. Of course, it would never do to speak of the material rejected at the mill as waste unless this material could be turned to use by some better and more thorough form of utilization. But in many cases we know, and in many other cases we have excellent reason to believe, that most, if not all, of this material could be used with profit. It is simply a question of intelligent investigation and, more than all, of having the will to economize.

But there are other ways to conserve the forests besides cutting in half the present waste of forest products. The forests can be made to produce three or four times as rapidly as they do at present. This is true of both the virgin forests and the cut-over lands. Virgin forests are often fully stocked with first-class timber, but this stock has been laid in very slowly, on account of the wasteful competition which is carried on constantly between the rival trees. Then, too, in the virgin forests there are very many trees which have reached maturity and stopped growing, and these occupy space which, if held by younger trees, would be laying in a new stock constantly. As regards the cut-over land, severe cutting, followed by fire, has checked growth so seriously that in most cases reproduction is both poor and slow, while in many other cases there is no true forest reproduction at all at present, and there is but little hope for the future.

In addressing the Conference of Governors, the Hon William Jennings Bryan said:

"No subject has been brought out more prominently at this Conference than the subject of forestry, and it justifies the time devoted to it, for our timberlands touch our national interests at several points. Our use of lumber is enormous, but immense as would be the inconvenience and loss caused by the absence of lumber, the consequence of the destruction of our forests would be still more disastrous to the nation. As has been shown, the timber on our mountain ranges protects our water supply. Not to speak of changes in climate which might follow the denuding of our mountains, the loss to the irrigated country could not be remedied and the damage to the streams could not be calculated."

COAL.

During our national existence we have used 7½ billion tons of coal and wasted 9 billion tons. In the decade 1896 to 1905 almost as much coal was mined as had been produced during the whole previous history of the country. In 1906, the consumption of coal was 46 per cent greater than that of the average for the preceding ten years. In 1907 we produced 480 million tons, 66 million tons more than was mined in 1906.

Mr. James J. Hill made the following prophecy at the Conference:

"Fifty years ago the annual per capita production of coal was a little more than a quarter of a ton. It is now 5 tons. It is but eight years since we took the place of England as the leading coal-producing nation of the world, and already our product exceeds hers by 43 per cent, and is 37 per cent of the known production of the world. * * * If coal production continues to increase as it has in the last ninety years, the available supply will be greatly reduced by the close of the present century."

While the coal is certain to be exhausted in time, because it does not renew itself and can not be renewed, waste can be checked. At least half of the coal in the mines is left in the ground, beyond reach. We pride ourselves on being exporters of coal. It would be awkward if we should wish to import it some day and find that we could not.

"Still more wasteful than our process of mining," said Mr. Andrew Carnegie, "are our methods of consuming coal. Of all the coal burned in the power plants of the country not more than from 5 per cent to 10 per cent of the potential energy is actually used; the remaining 90 per cent to 95 per cent is absorbed in rendering the smaller fraction available in actual work. In direct heating the loss is less, but in electric heating and lighting it is much more—indeed in ordinary electric-light plants hardly one-fifth of 1 per cent, one five-hundredth part, of the energy of the coal is actually utilized."

Mr. John Mitchell touched particularly upon the waste of human lives:

"It is a sad commentary upon our vaunted civilization that more men are killed or crippled in mining in the United States than in any other nation on earth."

NATURAL GAS.

Speaking of the waste of natural gas, Dr. I. C. White, State geologist of West Virginia, said:

"No one can even approximate the extent of this waste. From personal knowledge of conditions which exist in every oil and gas field, I am sure the quantity will amount to not less than one billion cubic feet daily, and it may be much more. The heating value of a

billion cubic feet of natural gas is roughly equivalent to that of one million bushels of coal. What an appalling record to transmit to posterity!"

"There can be no doubt that for every barrel of oil taken from the earth there have been wasted more than ten times its equivalent in either heating power or weight of this the best of all the fuels, and also that much more than half of this frightful waste could have been avoided by proper care in oil production and slight additional expenditures."

IRON.

In his address on "The Natural Wealth of the Land and its Conservation," Mr. James J. Hill made the following statements:

"We turn out over 25,000,000 tons of pig iron every year, and the production for the first half of 1907 was at the rate of 27,000,000 tons. This is two and one-half times the product of Great Britain. It is nearly half the product of the whole world. And the supply of this most precious of all the metals is so far from inexhaustible that it seems as if iron and coal might be united in their disappearance from common life."

THE SOIL.

Mr. Hill, in the course of the same address, emphasized the value of the soil in these words:

"All of our vast domestic commerce, equal in value to the foreign trade of all the nations combined, is supported and paid for by the land. * * * It is the capital upon which alone we can draw through all the future, but the amount of the draft that will be honored depends upon the care and intelligence given to its cultivation."

"* * * We are only beginning to feel the pressure upon the land. The whole interior of this continent, aggregating more than 500,000,000 acres, has been occupied by settlers within the last 50 years. What is there left for the next fifty years? * * * In 1906 the total unappropriated public lands in the United States consisted of 792,000,000 acres. Of this area the divisions of Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, and Wyoming contained 195,700,000 acres of unsurveyed land. Little of Alaska is fitted for general agriculture, while practically all of the rest is semiarid, available only for grazing or irrigation. We have (subtracting these totals) 50,000,000 acres of surveyed and 36,500,000 acres of unsurveyed land as our actual remaining stock. And 21,000,000 acres were disposed of in 1907. How long will the remainder last?"

With the tillable land all occupied, the question of permanent soil fertility becomes of critical importance. Yet, except over an insignificant area, soil destruction and soil exhaustion are the rule. Stripping the forests from the hillsides has rendered hundreds of

thousands of acres in the East and South unfit for tillage, because floods have followed clearing, scoring the slopes with gullies and smothering the bottoms with sand. From the washing of soils not properly protected we lose every year one billion tons of the richest soil matter, which is swept from the surface of the farms and dumped recklessly into the sea.

The soil is being exhausted by single-cropping and scanty fertilization. On soils originally of high fertility we raise from 12½ to 15 bushels of wheat to the acre. England, Belgium, the Netherlands, and Denmark have averaged 30 bushels of wheat to the acre for the past five years.

Authorities say that it takes ten thousand years for one foot of tillable soil to form. It is probably not seldom that we waste in ten years what it has taken nature a thousand times as long to accumulate.

WATER.

We enjoy water mainly in three forms—as an article of use, as a source of power, and as a means of transportation. Habitually we regard our supply of water as inexhaustible, like the air. And it is true that our folly can never prevent the larger movements of water upon the earth; the rains and snows are controlled by the great cosmic forces and by geographical conditions over which we have but slight control. But while we can exert only a small influence over the supply of water in general, we can exercise a decided influence upon the form in which the supply reaches us. Wherever there are hills and valleys there are watersheds and water courses, and nothing that we can do can prevent the rains from falling upon the hills, running down to the valleys, and passing off in streams and rivers into the ocean; but we can change the speed of water flow in the drainage basins. If we cut the forests clean on the hillsides we are removing a check which otherwise retards the water, with the result that the rains run off quickly into the rivers, swelling them violently and bringing floods. Where the slopes of drainage basins have been cleared in this way the floods have been disastrous; and the floods are followed by drought, because the hills, which are naturally the reservoirs of the streams, have run dry. France has a saying, "No forests, no rivers," just because this is so.

By interfering in this way with the natural regimen of the streams, we deprive ourselves of water in all three of its useful forms; we dry up the springs, we render stream flow so inconstant that its availability for power is seriously impaired or even ruined, and we destroy our water-courses for navigation purposes by choking them with the silt washed down by the floods.

Of all the wastes of natural resources, we can afford the waste of water least of all. Yet principally by the rash destruction of the

natural forest reservoirs we have already allowed stream flow to get beyond our control. Enormous damage has been done, and is repeated year after year, simply because we have stripped the forests from the hills.

POWER.

There is no need to touch upon the value of water as a commodity, the water with which we quench our thirst and which supplies our household needs. But we do need to think more logically about water as a means of power. This is the beginning, the engineers tell us, of the age of electricity, and that means the beginning of the age of water power. Mr. H. St. Clair Putnam, in his address on "The Conservation of Power Resources" before the Conference, said that the United States now has 30 million horsepower available in its streams, which is equivalent to the total horsepower utilized for all forms of production and transportation throughout the country. Thirty per cent of all the horsepower now used is utilized electrically, and this electrical use of power is the growth of twenty-five years. By 1920, if the increase of electrical power continues steadily, it will equal or exceed the power mechanically applied.

The full development of all the water possibilities of the country would, according to expert estimates, furnish a power equaling, and probably greatly exceeding, five times the present total horsepower of all kinds, or 150 million horsepower.

INLAND NAVIGATION.

Prof. Emory R. Johnson, in his address on "Navigation Resources of American Waterways" at the Conference, said:

"The possibilities of inland navigation are indicated by the fact that there are in mainland United States some 25,000 miles of navigated rivers and at least an equal amount which are navigable or might be made so by improvement; there are also some 2,500 miles of navigable canals, and over 2,500 miles of sounds, bays, and bayous readily connectable by canals aggregating less than 1,000 miles in length to form inner passages paralleling the Atlantic and Gulf coasts—these being additional to some thousands of miles (reckoned between leading ports) of regularly navigated waters in lakes and land-locked bays.

"There can be no doubt that the inland waterways of the United States will be more extensively used in the future than they have been in the past. The reasons for this are conclusive:

"(1) The internal commerce of the United States is growing rapidly and is certain to increase with accelerating speed. The demands for transportation facilities are expanding so swiftly as to make it

apparent that the products of our farms, mines, forests, and factories can not secure ready and economical transportation unless at least the larger trunk line water routes of the country are adapted to the needs of commerce.

"(2) The necessity for the development of our waterways is emphasized by the fact that any considerable future reductions in the costs of rail transportation are improbable. Indeed, for reasons that have already been stated in this paper, the service of American railroads may be expected to be developed in the future more and more with reference to handling commodities expeditiously and in small units. That is what is taking place in other countries; there is no reason to suppose that our experience will differ greatly from theirs. The economy of employing both railroads and waterways for the performance of the transportation services becomes greater in every country and in particular sections of a country with the increase in population and the development and specialization of industry.

"(3) American waterways will, in the years to come, be utilized more for navigation, because we are certain, sooner or later, to conserve and use the entire water resources of the country simultaneously not only for navigation, but also for irrigation, for water power, and for supplying our urban populations with pure water. Moreover, the growing necessity for controlling our streams so as to make possible the reclamation of our vast areas of reclaimable lands will tend to hasten the time when our principal waterways will be so regulated as to be serviceable for navigation.

"In the past we have permitted the reckless destruction of our forests, and it has been our practice to let the streams spread their floods destructively over their valleys and hurry their surplus water to the sea. We can not long afford to be so wasteful of one of our greatest natural resources. We ought to, and we shall, reforest our wild mountain areas; we shall hold back the flood waters to irrigate our arid lands, to turn the wheels of industry, to maintain the channels of navigation, to give the towns and cities their water supply, and to equalize the seasonal flow of our rivers, so that neither flood nor low water shall be a recurring menace to life and property."

The Hon. William Jennings Bryan, in addressing the Conference, touched upon the question of navigation on the inland waterways. He said:

"I shall not defend the improvement of these waterways on the ground that such improvement would help to regulate the railroad rates, although it would aid regulation; for whenever the people are ready they will exercise the power which they have. But water traffic is less expensive than traffic by rail, and there are many commodities which can be transported much more cheaply by water than they

possibly could be carried by land. I believe it has been estimated that an expenditure of $500,000,000 on interior waterways would result in a saving of nearly $200,000,000 annually."

Mr. Bryan spoke also of irrigation and of drainage:

IRRIGATION.

"Irrigation has justified the argument which led to the inauguration of the work. No one who has witnessed the transformation of the desert into field and garden can doubt the wisdom of the steps that have been taken. Here, or elsewhere, both the nation and the State can find a field for legitimate activity, and I am sure that there will be a continuation of this work until all of the waters which can be utilized for that purpose have been appropriated.

DRAINAGE.

"The same principle which was invoked in support of irrigation can be invoked in support of drainage. The question is not whether the water should be brought upon the land or taken off the land; it is whether the land shall be made tillable and its wealth-producing qualities utilized."

There are some 77 million acres of swamp land now useless, which, if drained, would be available for agricultural use, since they are naturally very fertile. Allowing 40 acres to each family, this area would furnish homes for 10 million persons.

THE ORIGIN OF THE CONSERVATION COMMISSION.

A realization that natural resources were being needlessly wasted was first brought home to us by a threat of wood shortage. The forest problem opened the eyes of the people to the condition of our natural resources as a whole. It was seen that our national progress, even our national existence, depends upon reform in our methods of using the natural riches of the land; that it was time to set our national house in order, to take stock of our resources, and to lay plans for their wiser use in the future.

The Inland Waterways Commission was appointed by the President in March, 1907. It reported to the President February 3, 1908, and on February 26 the President sent to Congress a message, transmitting the report, approving its findings, and urging that its recommendations be enacted into law. The work of the Commission had developed the wide-reaching importance of the waterways problem, and had taken up the relation of the waterways and the water supplies of the country to all of the natural resources affected. It brought into prominence the great need of conserving, not one or a few, but all of the natural resources of the country.

At the suggestion of the Inland Waterways Commission, in order more fully to consider the far-reaching problems of conservation, the President, early last winter, invited the governors of the States and Territories to a conference in Washington to consider the whole question. Men of national prominence, familiar from experience in business life with the four great classes of resources—the forests, waters, mines, and the soil—were also invited to the conference. The conferees met in the White House May 13–15, 1908, and before adjournment the governors signed the following:

DECLARATION OF PRINCIPLES.

We, the governors of the States and Territories of the United States of America in conference assembled, do hereby declare the conviction that the great prosperity of our country rests upon the abundant resources of the land chosen by our forefathers for their homes, and where they laid the foundation of this great nation.

We look upon these resources as a heritage to be made use of in establishing and promoting the comfort, prosperity, and happiness of the American people, but not to be wasted, deteriorated, or needlessly destroyed.

We agree that our country's future is involved in this; that the great natural resources supply the material basis upon which our civilization must continue to depend, and upon which the perpetuity of the nation itself rests.

We agree, in the light of the facts brought to our knowledge and from information received from sources which we can not doubt, that this material basis is threatened with exhaustion. Even as each succeeding generation from the birth of the nation has performed its part in promoting the progress and development of the Republic, so do we in this generation recognize it as a high duty to perform our part; and this duty in large degree lies in the adoption of measures for the conservation of the natural wealth of the country.

We declare our firm conviction that this conservation of our natural resources is a subject of transcendent importance which should engage unremittingly the attention of the nation, the States, and the people in earnest cooperation. These natural resources include the land on which we live and which yields our food; the living waters which fertilize the soil, supply power, and form great avenues of commerce; the forests which yield the materials for our homes, prevent erosion of the soil, and conserve the navigation and other uses of the streams; and the minerals which form the basis of our industrial life, and supply us with heat, light, and power.

We agree that the land should be so used that erosion and soil wash shall cease; and that there should be reclamation of arid and semiarid regions by means of irrigation, and of swamp and overflowed regions by means of drainage; that the waters should be so conserved and used as to promote navigation, to enable the arid regions to be reclaimed by irrigation, and to develop power in the interests of the people; that the forests which regulate our rivers, support our industries, and promote the fertility and productiveness of the soil should be preserved and perpetuated; that the minerals found so abundantly beneath the surface should be so used as to prolong their utility; that the beauty, healthfulness, and habitability of our country should be preserved and

increased; that sources of national wealth exist for the benefit of the people, and that monopoly thereof should not be tolerated.

We commend the wise forethought of the President in sounding the note of warning as to the waste and exhaustion of the natural resources of the country, and signify our high appreciation of his action in calling this Conference to consider the same and to seek remedies therefor through cooperation of the nation and the States.

We agree that this cooperation should find expression in suitable action by the Congress within the limits of and coextensive with the national jurisdiction of the subject, and, complementary thereto, by the legislatures of the several States within the limits of and coextensive with their jurisdiction.

We declare the conviction that in the use of the national resources our independent States are interdependent and bound together by ties of mutual benefits, responsibilities, and duties.

We agree in the wisdom of future conferences between the President, Members of Congress, and the governors of States on the conservation of our natural resources with a view of continued cooperation and action on the lines suggested; and to this end we advise that from time to time, as in his judgment may seem wise, the President call the governors of States and Members of Congress and others into conference.

We agree that further action is advisable to ascertain the present condition of our natural resources and to promote the conservation of the same; and to that end we recommend the appointment by each State of a commission on the conservation of natural resources, to cooperate with each other and with any similar commission of the Federal Government.

We urge the continuation and extension of forest policies adapted to secure the husbanding and renewal of our diminishing timber supply, the prevention of soil erosion, the protection of headwaters, and the maintenance of the purity and navigability of our streams. We recognize that the private ownership of forest lands entails responsibilities in the interests of all the people, and we favor the enactment of laws looking to the protection and replacement of privately owned forests.

We recognize in our waters a most valuable asset of the people of the United States, and we recommend the enactment of laws looking to the conservation of water resources for irrigation, water supply, power, and navigation, to the end that navigable and source streams may be brought under complete control and fully utilized for every purpose. We especially urge on the Federal Congress the immediate adoption of a wise, active, and thorough waterway policy, providing for the prompt improvement of our streams and the conservation of their watersheds required for the uses of commerce and the protection of the interests of our people.

We recommend the enactment of laws looking to the prevention of waste in the mining and extraction of coal, oil, gas, and other minerals with a view to their wise conservation for the use of the people, and to the protection of human life in the mines.

Let us conserve the foundations of our prosperity.

[Cir. 157]

STATEMENTS BY MEN PROMINENT IN NATIONAL AFFAIRS UPON THE SUBJECT OF CONSERVATION.

His Eminence CARDINAL GIBBONS.

"No policy of our National Government is more in keeping with those democratic principles upon which our Republic is founded than the conservation of our natural resources, and none is to have a greater influence upon the future prosperity of our land. Our fertile soils, our inland waters, our mines, and our forests are God-given heritages which belong no more to the present generation than to generations that are to come. It is our duty as American citizens to regard these resources as sacred trusts, to preserve them, and to use them wisely and with moderation, that we may, as far as possible, provide against the days of want that are surely approaching; and that when these days are at hand they may not come as a crushing retribution, but as a wholesome discipline by which we shall be taught the great lessons of thrift and foresight."

SECRETARY ROOT.

"The Nation can not perform the functions of the State sovereignties. If it were to undertake to perform those functions it would break down. The machinery would not be able to perform the duty. The pressure is already very heavy upon the national machinery to do its work. * * * It is high time that the sovereign States of the Union should begin to perform their duties with reference not only to their own local individual interests, but with reference to the common good. * * * I regard this meeting as marking a new departure, the beginning of an era in which the States of the Union will exercise their reserve sovereign powers upon a higher plane of patriotism and love of country than has ever existed before."

SECRETARY WILSON.

"When you speak practically of the destruction of a soil it means that you have taken away that part of the plant's food that comes from the atmosphere, and good farming means keeping the supply of that organic matter in the soil through which proper physical conditions may be maintained and moisture retained in dry times."

SECRETARY GARFIELD.

"* * * Why should a great resource, which is owned by the people at large, be used by private interests, by somebody that is looking only to his own benefit, and not to the benefit of the people of the country. The people as a whole own these natural resources. They are not divided. But the people as a whole, as I say, own

them, and it is for them to determine whether those resources shall be used for the benefit of all, or shall be turned over to be used unregulated for the benefit of those who may perchance first get a foothold in any special locality. * * * In any law that is passed, in any theory of disposition that is adopted, we must look not only to their conservation and use, but we must look to the prevention of their monopolization * * * in the hands of a few favored interests."

The Hon. WILLIAM JENNINGS BRYAN.

"* * * It should be our purpose, not only to preserve the nation's resources for future generations by reducing waste to a minimum * * * we should see to it that a few of the people do not monopolize that which in equity is the property of all the people. The earth belongs to each generation, and it is as criminal to fetter future generations with perpetual franchises, making the multitude servants to a favored faction of the population, as it would be to impair, unnecessarily, the common store.

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"Money spent in care for the life and health of the people, in protecting the soil from erosion and from exhaustion, in preventing waste in the use of minerals of limited supply, in the reclamation of deserts and swamps, and in the preservation of forests still remaining and the planting of denuded tracts—money invested in these and in the development of waterways and in the deepening of harbors is an investment yielding an annual return. If any of these expenditures fail to bring a return at once the money expended is like a bequest to those who come after us. And as the parent lives for his child as well as for himself, so the good citizen provides for the future as well as for the present. This gathering will be remembered by future generations, because they as well as ourselves will be the recipients of the benefits which will flow from this conference. We have all been strengthened by communion together; our vision has been enlarged and the enthusiasm here aroused will permeate every State and every community."

The Hon. WILLIAM H. TAFT.

"The conservation of National resources is a subject to which the present Administration has given especial attention. The necessity for a comprehensive and systematic improvement of our waterways, the preservation of our soil and of our forests, the securing from private appropriation the power in navigable streams, the retention of the undisposed of coal lands of the Government from alienation, all will properly claim from the next Administration earnest attention and appropriate legislation."

"Without the resources which make labor productive, American enterprise, energy, and skill would not in the past have been able to make headway against hard conditions. Our children and their children will not be able to make headway if we leave to them an impoverished country. Our land, our waters, our forests, and our minerals are the sources from which come directly or indirectly the livelihood of all of us. The conservation of our natural resources is a question of fundamental importance to the United States now."

Mr. ANDREW CARNEGIE.

"We are nationally in the position of a large family receiving a rich patrimony from thrifty parents deceased intestate * * *. Now, the first duty of such a family is to take stock of its patrimony; the next to manage the assets in such manner that none shall be wasted, that all be put to the greatest good of the living and their descendants."

Mr. JAMES J. HILL.

"'Of all the sinful wastes of man's inheritance on earth,' said the late Professor Shaler, 'and all are in this regard sinners, the very worst are the people of America.' This is not a popular phrase, but a scientific judgment. It is borne out by facts. In the movement of modern times, which has made the world commercially a small place and has produced a solidarity of the race such as never before existed, we have come to the point where we must to a certain extent regard the natural resources of this planet as a common asset, compare them with demands now made and likely to be made upon them, and study their judicious use.

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"Not only the economic but the political future is involved. No people ever felt the want of work or the pinch of poverty for a long time without reaching out violent hands against their political institutions, believing that they might find in a change some relief from their distress. * * * Every nation finds its hour of peril when there is no longer free access to the land, or when the land will no longer support the people."

Mr. JOHN MITCHELL.

"In our mad rush for spoils and profits we not only waste and destroy those material resources with which God has so bountifully endowed us, but we press forward in the race, sacrificing, unnecessarily, the lives and the comfort of our fellow-beings. It seems to me that the time has come when we should stop for a moment and think—not alone of those inanimate things that make for comfort and prosperity, but also of the men, and the women, and the children,

whose toil and deprivation have made and will continue to make our country and our people the most progressive and the most intelligent of all the nations and of all the peoples of the earth."

GOVERNOR CUTLER, of Utah.

"The great, broad principle underlying the subject of conservation is whether or not each succeeding generation can be sustained on the land without impoverishing it in any respect. Stated as a question it is, 'Will each generation have the land as rich as the preceding one?' It seems a simple question, and yet the safety and the lives of our children and our children's children will depend upon the answer. The forests, the streams, the soil, the minerals, and all the other natural elements of wealth should remain as nearly as possible undiminished as the centuries pass. All of this is in the hands of the people, with the possible exception of the preservation of the mineral wealth."

GOVERNOR GOODING, of Idaho.

"We have built here a great nation, without a thought of tomorrow. We will grow still greater, even if we follow the same old methods that we have followed in the past. But we can not reach our full share of greatness as a nation unless, before it is too late, we throw safeguards around those resources that have made us the mightiest nation on the earth, so that they can be preserved and protected, that they may be developed to the greatest extent for the benefit of this and future generations."

GOVERNOR MEAD, of Washington.

"Our people are ready and willing to contribute from their revenues, from their means, to the conservation of all these interests. My friends, with that disposition, with an exalted patriotism among the people in favor of the perpetuation of these God-given resources, I, for one, have no fear for the future of this great Republic and of its people."

Dr. JOHN B. ANGELL, President of University of Michigan.

"I think we may say that in the whole history of our country, so far as I can recall, there has never been an assemblage, since the one that was gathered to frame the Constitution of the United States, where such lofty interests were apparently considered with such a lofty patriotic spirit as seems to be manifested here to-day. I am sure that this will stand upon record as a great historic event, and that you, and your children, will all be proud that you have been able to participate in it."

Dr. CHARLES R. VAN HISE, President of the University of Wisconsin.

"* * * Even the most sanguine calculations can not hold out the hope that the available high-grade ores of iron, copper, lead,

zinc, gold, and silver, at the present rate of exploitation, will last for centuries into the future. And what are one or two centuries compared with the expected future life of the Nation?"

Dr. I. C. WHITE, State Geologist of West Virginia.

"Just as sure as the sun shines, and the sum of two and two is four, unless this insane riot of destruction and waste of our fuel resources which has characterized the past century shall be speedily ended, our industrial power and supremacy will, after a meteor-like existence, revert before the close of the present century to those nations that conserve and prize at their proper value their priceless treasures of carbon."

Mr. J. M. DICKINSON, President of the American Bar Association.

"This seems to have been accepted as the most beneficent movement for the general welfare that has ever been inaugurated."

Mr. JOHN HAYS HAMMOND.

"The ever-increasing rapidity of exploitation consequent upon the exigencies of modern engineering and economic practice inevitably leads to an alarming diminution of the lives—if I may use that term—of our mineral deposits. The culmination of our mining industry is to be reckoned in decades, and its declension (if not practically its economic exhaustion) in generations, not in centuries."

Mr. JAMES S. WHIPPLE, State Forest, Fish, and Game Commissioner of New York.

"The most imperative thing that we have to do in America to-day is to save the forests of the country."

Col. WILLIAM S. HARVEY, of Pennsylvania.

"If we want to prolong American prosperity and maintain the high level of American wages, our wage being double that of the other nations of the earth, we must protect our facilities and enlarge our ability to produce and manufacture the things that we manufacture at the lowest cost. * * * If we had no advantage in the marketing of our goods, either in excellence or quantity or cheapness of production, it simply would mean that American labor would be reduced to the labor of all other nations of the world, and if we want to maintain its high level we must protect the facilities that will enable us to produce our goods at the very lowest possible cost."

LETTER OF THE PRESIDENT APPOINTING THE NATIONAL CONSERVATION COMMISSION.

On June 8, 1908, the President appointed the National Conservation Commission, and the following is the letter addressed by him to the members on that occasion:

THE WHITE HOUSE,
Washington, June 8, 1908.

The recent Conference of Governors in the White House confirmed and strengthened in the minds of our people the conviction that our natural resources are being consumed, wasted, and destroyed at a rate which threatens them with exhaustion. It was demonstrated that the inevitable result of our present course toward these resources, if we should persist in following it, would ultimately be the impoverishment of our people. The governors present adopted unanimously a declaration reciting the necessity for a more careful conservation of the foundations of our national prosperity and recommending a more effective cooperation to this end among the States and between the States and the nation. A copy of his declaration is inclosed.

One of the most useful among the many useful recommendations in the admirable declaration of the governors relates to the creation of State commissions on the conservation of resources, to cooperate with a Federal Commission. This action of the governors can not be disregarded. It is obviously the duty of the Federal Government to accept this invitation to cooperate with the States in order to conserve the natural resources of our whole country. It is no less clearly the duty of the President to lay before the Federal Congress information as to the state of the Union in relation to the natural resources, and to recommend to their consideration such measures as he shall judge necessary and expedient. In order to make such recommendations the President must procure the necessary information. Accordingly I have decided to appoint a commission to inquire into and advise me as to the condition of our natural resources, and to cooperate with other bodies created for a similar purpose by the States.

The Inland Waterways Commission, appointed March 14, 1907, which suggested the Conference of Governors, was asked to consider the other natural resources related to our inland waterways, and it has done so. But the two subjects together have grown too large to be dealt with by the original body. The creation of a Commission on the Conservation of Natural Resources will thus promote the special work for which the Inland Waterways Commission was created, and for which it has just been continued and enlarged, by enabling it to concentrate on its principal task.

The Commission on the Conservation of Natural Resources will be organized in four sections to consider the four great classes—water resources, forest resources, resources of the land, and mineral resources. I am asking the members of the Inland Waterways Commission to form the Section of Waters of the National Conservation Commission. In view of the lateness of the season and the difficulty of assembling the members of the sections at this time, a chairman and a secretary for each section have been designated, and the chairmen and secretaries of the sections will act as the executive committee, with a chairman who will also be chairman of the entire Commission. I earnestly

hope that you will consent to act as a member of the Commission, in common with the following gentlemen: *

WATERS.

Hon. Theodore E. Burton, Ohio, Chairman.
Senator William B. Allison, Iowa.*
Senator Francis G. Newlands, Nevada.
Senator William Warner, Missouri.
Senator John H. Bankhead, Alabama.
Mr. W J McGee, Bureau of Soils, Secretary.
Mr. F. H. Newell, Reclamation Service.
Mr. Gifford Pinchot, Forest Service.
Mr. Herbert Knox Smith, Bureau of Corporations.
Hon. Joseph E. Ransdell, Louisiana.
Prof. George F. Swain, Institute of Technology, Massachusetts.
The Chief of Engineers, United States Army.†

FORESTS.

Senator Reed Smoot, Utah, Chairman.
Senator Albert J. Beveridge, Indiana.
Senator Charles A. Culberson, Texas.*
Hon. Charles F. Scott, Kansas.
Hon. Champ Clark, Missouri.
Mr. J. B. White, Missouri.
Prof. Henry S. Graves, Yale Forest School, Connecticut.
Mr. William Irvine, Wisconsin.
Ex-Governor Newton C. Blanchard, Louisiana.
Mr. Charles L. Pack, New Jersey.
Mr. Gustav Schwab, National Council of Commerce, New York.
Mr. Overton W. Price, Forest Service, Secretary.

LANDS.

Senator Knute Nelson, Minnesota, Chairman.
Senator Francis E. Warren, Wyoming.
Hon. John Sharp Williams, Mississippi.*
Hon. Swagar Sherley, Kentucky.
Hon. Herbert Parsons, New York.
Ex-Governor N. B. Broward, Florida.
Mr. James J. Hill, Minnesota.
Ex-Governor George C. Pardee, California.
Mr. Charles Macdonald, American Society of Civil Engineers, New York.
Mr. Murdo Mackenzie, Colorado.
Mr. Frank C. Goudy, Colorado.
Mr. George W. Woodruff, Interior Department, Secretary.

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* Jonathan P. Dolliver, of Iowa, of the Section of Waters, has since succeeded William B. Allison, deceased. Irving Fisher, of Connecticut, is serving in place of Charles A. Culberson on the Section of Forests, and T. C. Chamberlin, of the University of Chicago, is serving in place of John Sharp Williams on the Section of Lands.

† Brigadier-General W. L. Marshall.

MINERALS.

Hon. John Dalzell, Pennsylvania, Chairman.
Senator Joseph M. Dixon, Montana.
Senator Frank P. Flint, California.
Senator Lee S. Overman, North Carolina.
Hon. Philo Hall, South Dakota.
Hon. James L. Slayden, Texas.
Mr. Andrew Carnegie, New York.
Prof. Charles R. Van Hise, Wisconsin.
Mr. John Mitchell, Illinois.
Mr. John Hays Hammond, Massachusetts.
Dr. Irving Fisher, Yale University, Connecticut.*
Mr. Joseph A. Holmes, Geological Survey, Secretary.

EXECUTIVE COMMITTEE.

Mr. Gifford Pinchot, Chairman.
Hon. Theodore E. Burton.
Senator Reed Smoot.
Senator Knute Nelson.
Hon. John Dalzell.
Mr. W J McGee.
Mr. Overton W. Price.
Mr. George W. Woodruff.
Mr. Joseph A. Holmes.

One of the principal objects of the Federal Commission on the Conservation of Natural Resources will be to cooperate with corresponding commissions or other agencies appointed on behalf of the States, and it is hoped that the governors and their appointees will join with the Federal Commission in working out and developing a plan whereby the needs of the nation as a whole and of each State and Territory may be equitably met.

The work of the Commission should be conditioned upon keeping ever in mind the great fact that the life of the nation depends absolutely on the material resources, which have already made the nation great. Our object is to conserve the foundations of our prosperity. We intend to use these resources; but to so use them as to conserve them. No effort should be made to limit the wise and proper development and application of these resources; every effort should be made to prevent destruction, to reduce waste, and to distribute the enjoyment of our natural wealth in such a way as to promote the greatest good of the greatest number for the longest time.

The Commission must keep in mind the further fact that all the natural resources are so related that their use may be, and should be, coordinated. Thus, the development of water transportation, which requires less iron and less coal than rail transportation, will reduce the draft on mineral resources; the judicious development of forests will not only supply fuel and structural material, but increase the navigability of streams, and so promote water transportation; and the control of streams will reduce soil erosion, and permit American farms to increase in fertility and productiveness and so continue to feed the country and maintain a healthy and beneficial foreign commerce. The proper coordination of the use of our resources is a prime requisite for continued national prosperity.

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* I. C. White, of West Virginia, is serving in place of Irving Fisher on the Section of Minerals.

The recent Conference of the Governors, of the men who are the direct sponsors for the well being of the States, was notable in many respects; in none more than in this, that the dignity, the autonomy, and yet the interdependence and mutual dependence of the several States were all emphasized and brought into clear relief, as rarely before in our history. There is no break between the interests of State and nation, these interests are essentially one. Hearty cooperation between the State and the national agencies is essential to the permanent welfare of the people. You, on behalf of the Federal Government, will do your part to bring about this cooperation.

In order to make available to the National Conservation Commission all the information and assistance which it may desire from the Federal Departments, I shall issue an Executive Order directing them to give such help as the Commission may need.

The next session of Congress will end on March 4, 1909. Accordingly, I should be glad to have at least a preliminary report from the Commission not later than January 1 of next year.

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